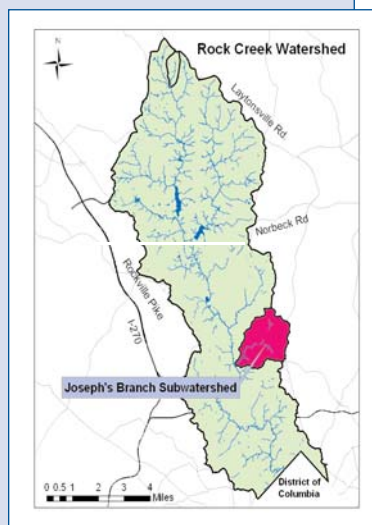


Watershed Restoration FACTSHEET:

Joseph's Branch Project



The Rock Creek Watershed, a tributary of the Potomac River, includes a drainage area of 60 square miles. Rock Creek flows 21 miles through central Montgomery County, east of I-270, then continues into the District of Columbia.



Joseph's Branch Subwatershed Facts:

Subwatershed Drainage Area: 1783 Acres, 2.8 square miles

Subwatershed Imperviousness: 24%

Property Ownership: Maryland-National Capital Park and Planning Commission

Restoration Goals:

To stabilize eroding stream banks, re-establish and enhance a riparian buffer, stabilize exposed sewer manholes, protect sewer lines, stabilize storm drain outfalls, improve fish passage, and improve aquatic habitat conditions.

Stream Restoration Project Facts:

Project Length: 1.3 miles

Costs: Structural (\$615,000)

Reforestation (\$85,000)

Funded in part through Maryland State Highway Administration TEA-21

Enhancement Program, administered by Federal Highway Administration.

Project Completion Date: January 2005

Stream Monitoring Facts:

Pre and Post Restoration Monitoring, following MCDEP Monitoring Protocols, will continue for five years post-construction

For complete technical and professional specifications (coming soon), visit askdep.com

Project Selection

Montgomery County has a continuing commitment to protect and improve its water resources. *The Countywide Stream Protection Strategy*, (CSPS, 1998, updated 2003), published by the Department of Environmental Protection (DEP), evaluated biological, chemical, and habitat conditions of streams in the county, and identified impaired "priority" subwatersheds for restoration, including the Joseph's Branch subwatershed.

Following the CSPS, *The Rock Creek Watershed Feasibility Study* (April 2001) evaluated more than 14 miles of Rock Creek and its tributaries to identify specific stream restoration and stormwater management opportunities. The Study identified 23 priority stream restoration sites, including the Joseph's Branch tributary of Rock Creek.

The Rock Creek Watershed Restoration Action Plan summarizes the results of the Feasibility Study, and is available on the DEP website,

askdep.com or by contacting DEP at 240.777.7712.

Pre-Restoration Conditions

Much of the lower Rock Creek Watershed, including the Joseph's Branch subwatershed, was developed prior to regulations requiring stormwater management control and contains a high percentage of impervious surface.

Uncontrolled stormwater runoff from highly impervious areas creates erosive, high velocity or "flashy"

flows that cause damage to receiving streams.

The Rock Creek Watershed Feasibility Study identified several impaired conditions in Joseph's Branch. Uncontrolled stormwater created severe stream bank erosion and unstable banks, and further undercut trees which then fell into the stream and created debris jams that blocked the stream and caused additional bank erosion.

Over time, the stream channel down-cut and became overwidened which limited

stream flow access to the original floodplain, exposed sewer manholes, threatened buried sewer lines, and destroyed habitat necessary for diverse aquatic life. Sediment from eroded banks and road grit accumulated in the stream, further degrading stream habitat conditions.

Restoration Actions

The Joseph's Branch Project used restoration techniques and reforestation to help stabilize stream banks and enhance riparian habitat. Newly built

in-stream structures included rock and log vanes, which direct water away from unstable stream banks, and form down stream scour pools, providing habitat for fish. Rock cross vanes also function as grade control structures, which slow the erosive process of stream down-cutting.

Root wad revetments are instream structures, added to help stabilize streambanks, and create scour holes, and overhead cover for fish.

Boulder rock installed at the toe of the stream bank slope



Boulder rock stabilizes the toe of the stream bank slope and creates a new floodplain terrace. Native riparian trees and shrubs planted above the rock will provide long-term bank stability



Root wad revetments, located on the outside of a meander, help stabilize the bank and create habitat and cover for aquatic insects and fish.

Pre-restoration conditions included severely eroded stream banks, undercut trees, limited habitat features, and exposed utilities

stabilized the area of the stream channel subject to the greatest erosive, or "shear", stress. The slopes above the reinforced toe were graded back to create new floodplain terraces, and planted with native trees and shrubs to further stabilize the streambanks.

The project attempted to save undercut stream bank trees with supportive "rock packing." More seriously damaged trees were flush cut, allowing the root systems to remain in the bank for stabilization.

Other efforts to enhance the riparian habitat and buffer

included creating a shallow vernal pool at the upper end of the project, and planting more than 1,400 native plants and trees.

Montgomery County worked closely with the Washington Suburban Sanitary Commission (WSSC) to protect buried sewer lines with channel grade controls, and divert stream water flow away from exposed manholes. The WSSC made use of the County's temporary construction access to clean and reline existing sewer lines, further protecting sewer infrastructure.

follow web link for more information

see online glossary www.askdep.com/watershed_glossary.htm

For more information:



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askDEP.com
We've got answers!

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